

Notice of Allowability

Application No.

10/613,597

Examiner

Lawrence B. Williams

Applicant(s)

CHUA, BENG HUAT

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12 february 2007.
2. ☒ The allowed claim(s) is/are 1-54.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Billy J. Knowles on 26 February 2007.

a.) In claim 1, line 1 insert an "a" before "coded". In line 2, replace "signals" with "signal". In line 19, replace the word "signals" with "signal".

b.) In claim 3, line 2, replace the word "are" with "is".

c.) In claim 9, line 2, replace the word "are" with "is".

d.) In claim 14, line 1, insert "a" before "coded". In line 2, replace "signals" with "signal". In line 14, replace "signals" with "signal".

e.) In claim 17, line 4, replace "signals" with "signal".

f.) In claim 18, line 1, insert an "a" after "receiving". In line 2, replace "signals" with "signal". In line 6, replace the phrase, "comprising the steps of:" with "comprising:". In line 7, insert "the" before "coded". In line 16, replace "signals" with "signal".

g.) In claim 21, line 4, replace "signals" with "signal".

h.) In claim 22, line 1, insert "a" before "coded". In line 14, replace "signals" with "signal".

i.) In claim 25, line 4, replace "signals" with "signal".

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j.) In claim 37, line 9, replace the phrase “said digital processing system” with “said apparatus”.

k.) In claim 40, line 1, insert “a” before “coded”. In line 29, replace “signals” with “signal”.

l.) In claim 41, line 2, replace “are” with “is”.

m.) In claim 46, line 1, insert “a” before “coded”.

n.) In claim 49, line 1, insert “a” before “coded”.

o.) In claim 52, line 1, insert “a” before “coded”.

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: The instant application discloses a diversity receiver system and method. A search of prior art records has failed to teach or disclose, alone or in combination a diversity receiver system/ apparatus or method for receiving a coded data modulated signal from a transmission channel, wherein said diversity receiver system comprises:

“a signal acquisition device in communication with the transmission channel for reception of said multiple copies of said coded data modulated signal, for evaluation of signal characteristics of one or more copies of said multiple copies of said coded data modulated signal, for extracting coded data, control signals, and locking signals from the one or more copies of said multiple copies of said coded data; a diversity circuit in communication with the signal acquisition device to receive said signal characteristics and said coded data, said control signals, and locking signals, said diversity circuit selecting from said signal characteristics, said control signals, and said locking signals, one of said copies of said coded data modulated signal; and an error evaluation circuit in communication with the diversity circuit to receive the coded data from the selected copy of the coded data modulated signal, said error evaluation circuit evaluating said coded data signal for errors and providing an error signal to said diversity circuit indicating an error state of said selected data, wherein said diversity circuit selects a second copy of said coded data modulated signal” as disclosed in claim 1.

“said method for receiving the coded data modulated signal comprising the steps of: “a) acquiring the multiple copies of coded data modulated signal; b) evaluating signal characteristics of one or more copies of said multiple copies of said coded data modulated signal; c) extracting

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coded data, control signals, and locking signals from the one or more copies of said multiple copies of said coded data; d) selecting one of said copies of said coded data modulated signal from said signal characteristics, said control signals, and said locking signals; e) performing an error check and correction upon said coded data; and f) if the error check and correction is not able to correct said coded data, repeating steps d) and e) until a data block is successfully received” as disclosed in claim 14.

“said apparatus for receiving the coded data modulated signal comprising: “a) means for acquiring the multiple copies of coded data modulated signal; b) means for evaluating signal characteristics of one or more copies of said multiple copies of said coded data modulated signal; c) means for extracting coded data, control signals, and locking signals from the one or more copies of said multiple copies of said coded data; d) means for selecting one of said copies of said coded data modulated signal from said signal characteristics, said control signals, and said locking signals; e) means for performing an error check and correction upon said coded data; and f) means for repeatedly activating means d) and e) until a data block is successfully received, if the error check and correction is not able to correct said coded data” as disclosed in claim 18.

“said apparatus executing a process for receiving the coded data modulated signal comprising the steps of: “a) acquiring the multiple copies of coded data modulated signal; b) evaluating signal characteristics of one or more copies of said multiple copies of said coded data modulated signal; c) extracting coded data, control signals, and locking signals from the one or more copies of said multiple copies of said coded data; d) selecting one of said copies of said coded data modulated signal from said signal characteristics, said control signals, and said locking signals; e) performing an error check and correction upon said coded data; and f) if the

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error check and correction is not able to correct said coded data, repeating steps d) and e) until a data block is successfully received” as disclosed in claim 22.

“wherein said diversity receiver system comprises: a plurality of receiving transducers in communication with said transmission channel, each transducer acquiring one of said copies of the coded data modulated signal from said transmission channel and converting said copy of the coded data modulated signal to a received electrical signal, said received electrical signal varying in magnitude dependant upon the transmission time and variable attenuation characteristics of said transmission channel; a transducer switch in communication with the plurality of receiving transducers, which upon reception of a transducer selection signal selects one of said the electrical signals of a selected receiving transducer; a receiver in communication with the transducer switch to amplify and condition said electrical signal from a selected receiving transducer and to extract said coded data, control signals, and locking signals from said received electrical **signal**; a diversity circuit in communication with the receiver to receive said signal characteristics and said coded data, said control signals, and locking signals, and in communication with the transducer switch, said diversity circuit selecting from said signal characteristics, said control signals, and said locking signals, generates the transducer selection signal designating one of said copies of said coded data modulated signal; and an error evaluation circuit in communication with the receiver to receive the coded data from the selected copy of the coded data modulated signal, said error evaluation circuit evaluating said coded data signal for errors and providing an error signal to said diversity circuit indicating an error state of said selected data, wherein said diversity circuit generates a second transducer selection signal to select a second copy of said coded data modulated signal” as disclosed in claim 40.

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“said method for receiving the coded data modulated signal comprising the steps of: a) setting a priority value for each of a plurality of receiving transducers, said plurality of receiving transducers in communication with the transmission channel such that said receiving transducers convert one of the copies of the coded data modulated signal to a received electrical signal; b) selecting one of the plurality of receiving transducers having a highest priority; c) evaluating signal characteristics of said received electrical signal from the one receiving transducer having the highest priority; d) extracting coded data, control signals, and locking signals from the received electrical signal from the one receiving transducer having the highest priority; e) performing an error check and correction upon said coded data; f) if the signal characteristics, control signals, locking signals, and results of said error check and correction indicate that the received electrical signal is not adequate for reconstruction of coded data from said received electrical signal, adjusting said priority value of said receiving transducer to a lower priority; and g) repeating steps d) through f) until said coded data is successfully received” as disclosed in claim 46.

“said apparatus for receiving the coded data modulated signal comprising: “a) means for setting a priority value for each of a plurality of receiving transducers, said plurality of receiving transducers in communication with the transmission channel such that said receiving transducers convert one of the copies of the coded data modulated signal to a received electrical signal; b) means for selecting one of the plurality of receiving transducers having a highest priority; c) means for evaluating signal characteristics of said received electrical signal from the one receiving transducer having the highest priority; d) means for extracting coded data, control signals, and locking signals from the received electrical signal from the one receiving transducer

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having the highest priority; e) means for performing an error check and correction upon said coded data; f) means for adjusting said priority value of said receiving transducer to a lower priority, if the signal characteristics, control signals, locking signals, and results of said error check and correction indicate that the received electrical signal is not adequate for reconstruction of coded data from said received electrical signal; and g) means for repeatedly activating means of d) through f) until said coded data is successfully received” as disclosed in claim 49.

“said apparatus for receiving the coded data modulated signal executing a process comprising the steps of: a) setting a priority value for each of a plurality of receiving transducers, said plurality of receiving transducers in communication with the transmission channel such that said receiving transducers convert one of the copies of the coded data modulated signal to a received electrical signal; b) selecting one of the plurality of receiving transducers having a highest priority; c) evaluating signal characteristics of said received electrical signal from the one receiving transducer having the highest priority; d) extracting coded data, control signals, and locking signals from the received electrical signal from the one receiving transducer having the highest priority; e) performing an error check and correction upon said coded data; f) if the signal characteristics, control signals, locking signals, and results of said error check and correction indicate that the received electrical signal is not adequate for reconstruction of coded data from said received electrical signal, adjusting said priority value of said receiving transducer to a lower priority; and g) repeating steps d) through f) until said coded data is successfully received” as disclosed in claim 52.

Nor does the prior art teach or suggest, alone or in combination, a diversity receiver system/apparatus or method for receiving a broadcast signal modulated with coded data comprising:

“a plurality of receiving transducers, each transducer acquiring said broadcast signal and converting said broadcast signal to a received electrical signal, said received electrical signal varying in magnitude dependant upon an intensity of said broadcast signal traversing said multiple transmission paths; a plurality of receivers, each receiver in communication with one of said receiving transducers to amplify and condition said electrical signal and to extract data and locking signals from said received electrical signal; a diversity circuit in communication with each of the plurality of receivers to receive said data and locking signals, said diversity circuit selecting one of the data signals from one of the plurality of receivers having a valid locking signal indicating said receiver is able to retrieve said coded data from the electrical signal; and an error evaluation circuit in communication with the diversity circuit to receive the selected data signal, said error evaluation circuit evaluating said selected data signal for errors and providing an error signal to said diversity circuit indicating an error state of said selected data” as disclosed in claim 26.

“a method for receiving broadcast signal modulated with coded data comprising the steps of: a) acquiring said broadcast signal at one of a plurality of receivers; b) creating a locking signal indicating said receiver has successfully acquired said broadcast signal; c) if said locking signal is not able to be created, repeating steps a) and b) until a locking signal is created indicating successful acquisition of said broadcast signal; d) extracting one data block of a plurality of data blocks of said coded data from said broadcast signal; e) performing an error

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check and correction upon said data block for eliminating errors from said data block; f) if the error check and correction is not able to correct said data block, repeating steps a) through e) until a data block is successfully received; and g) repeatedly performing said error check and correction until all remaining data blocks of said broadcast signal are extracted and successfully checked and corrected for errors” as disclosed in claim 31.

“an apparatus for receiving a broadcast signal modulated with coded data comprising: a) means for acquiring said broadcast signal at one of a plurality of receivers; b) means for creating a locking signal indicating said receiver has successfully acquired said broadcast signal; c) means for activating the means of a) and b) until a locking signal is created indicating successful acquisition of said broadcast signal, if said locking signal is able to be created; d) means for extracting one data block of a plurality of data blocks from said broadcast signal; e) means for performing an error check and correction upon said data block for eliminating errors from said data block; f) means for activating the means of a) through e) until a data block is successfully received, if the error check and correction is not able to correct said data block; and g) means for repeatedly performing said error check and correction until all remaining data blocks of said broadcast signal are extracted and successfully checked and corrected for errors” as disclosed in claim 34.

Nor does the prior art teach or suggest, alone or in combination, an apparatus for acquiring coded data from a plurality of receiving transducers, said apparatus executing a program comprising the steps of: “a) selecting one of said plurality of receivers; b) detecting said locking signal indicating said receiver has successfully acquired said broadcast signal; c) if said locking signal is not able to be created by said, repeating steps a) and b) until a locking signal is

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created indicating successful acquisition of said broadcast signal; d) extracting one data block of a plurality of data blocks of said coded data from said electrical signal; e) performing an error check and correction upon said data block for eliminating errors from said data block; f) if the error check and correction is not able to correct said data block, repeating steps a) through e) until a data block is successfully received; and g) repeatedly performing said error check and correction until all remaining data blocks of said electrical signal are extracted and successfully checked and corrected for errors” as disclosed in claim 37.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

CONCLUSION

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams



lbw

February 27, 2007



EMMANUEL BAYARD
PRIMARY EXAMINER